Edd Clark & Associates, Inc.
Environmental Consultants

January 26, 2006
Job No.: 0461,001.03

Mr. Bill Rich
P.O. Box 251
Sausalito, CA 94966

Groundwater Monitoring Report - November 2005 Event
5085 Redwood Drive
Rohnert Park, California

Dear Mr. Rich:

Please accept this as Edd Clark & Associates, Inc's. (EC&A's) report on the November 4, 2005 groundwater monitoring event at 5085 Redwood Drive (site) in Rohnert Park, California (Figure 1). Groundwater monitoring is being conducted at the request of the County of Sonoma Department of Health Services (CSDHS) because of a release of fuel hydrocarbons (FHCs) to the subsurface from underground storage tanks (USTs) located at the site. Work performed for this monitoring event includes measuring depth to water (DTW) in and collecting groundwater samples for chemical analysis from monitoring wells MW-1, MW-2, MW-3 and MW-4 (Figure 2); calculating groundwater-flow direction and gradient; evaluating the results of the analyses and calculations; and preparing this report. A copy of this report will be submitted to the CSDHS for their review.

Water Level Measurements
On November 4, 2005, EC&A personnel measured DTW in MW-1 through MW-4. DTW below the top of well casing (TOC) in each well was measured to the nearest 0.01 foot (ft) with a water-level meter. The meter was cleaned and rinsed prior to taking measurements in each well. The DTW was recorded after the well caps were removed and groundwater in each well was allowed to equilibrate for at least 15 minutes. The DTW in wells MW-1 through MW-4 ranged from 5.31 ft to 5.59 ft; the calculated groundwater-flow direction and gradient were N71°W and 0.006 ft/ft, respectively (Table 1 and Figure 2).

Groundwater Field Logs containing DTW measurements are in Appendix A. DTW data will be electronically submitted to the State GeoTracker Internet Database.

Groundwater Sampling Procedures
On November 4, 2005, EC&A personnel collected groundwater samples from MW-1 through MW-4. Prior to collecting samples, the wells were purged with a submersible pump and the purged water checked for the presence of free-floating product. Free-floating product was not present in water purged from the wells. Groundwater pH, temperature, electric conductivity and oxidation-reduction potential were measured during purging of each well at intervals of approximately one well-casing volume. Groundwater samples were collected from each well after groundwater parameters stabilized and the water level in each well returned to a minimum of 80% of the initially

recorded water level. Purge volumes and groundwater-quality parameters are recorded on the Field Logs in Appendix A.

Groundwater samples were collected in new single-sample, disposable bailers fitted with disposable bottom-emptying devices to minimize water degassing. The samples were transferred from the bailers to properly labeled, laboratory-supplied sterile sample containers, logged on a chain-of-custody form, placed on ice and transported to McCampbell Analytical, Inc. (MAI) for chemical analysis. MAI is a State-certified laboratory in Pacheco, California.

Decontamination Procedures
Sampling equipment was cleaned onsite with a low-phosphorous soap and water solution and double rinsed with tap water. Decontamination water and monitoring well purge water were placed in a properly labeled, DOT 17H 55-gallon drum for temporary, onsite storage.

Groundwater Sample Analyses and Analytical Results
Groundwater samples collected from MW-1 through MW-4 were analyzed for total petroleum hydrocarbons (TPH) as gasoline (g) and benzene, toluene, ethylbenzene and xylenes (BTEX) by Analytical Methods SW8015Cm/8021B, and for methyl tert-butyl ether (MTBE) and other gasoline oxygenates and the lead scavengers 1,2-dibromoethane (EDB) and 1,2-dichloroethane (1,2-DCA) by Analytical Method SW8260B.

The only analyte detected in the monitoring wells was MTBE. Concentrations of MTBE in MW-1, MW-2, MW-3 and MW-4 were 140 micrograms per liter (µg/l), 430 µg/l, 3.6 µg/l and 1300 µg/l, respectively.

The results of analyses of groundwater samples collected from the monitoring wells are presented in Table 2. A complete copy of the analytical laboratory report is in Appendix B. The results of the analyses of the samples will be electronically submitted to the State GeoTracker Internet Database.

Discussion
Diesel (TPHd) has not been detected in groundwater collected from the monitoring wells. For the February 2005 groundwater sampling event, TPHg (in MW-1 and MW-2); BTEX components (in all four wells); and TBA (in MW-2 and MW-4) were detected for the first time. None of these analytes were detected for the May, August nor November 2005 events. MTBE has been detected in MW-1, MW-2 and MW-4 for all five sampling events conducted to date. In MW-3, low concentrations of MTBE were detected for four of the five events conducted to date. The highest concentrations of MTBE continue to be detected in MW-1 and MW-4 (Figure 3).

The maximum TPHg and benzene concentrations reported to date were detected in February 2005 at 400 µg/l (MW-2) and 19 µg/l (MW-2), respectively. The February 2005 TPHg and benzene detections in MW-2 are anomalous because MW-2 is further from the fuel dispensers and UST field than MW-1 and MW-4.

The maximum MTBE concentrations reported to date for MW-1 through MW-4 are 1200 µg/l (February 2005), 430 µg/l (November 2005), 6.1 µg/l (November 2004) and 1300 µg/l (November 2005), respectively. Between August and November of 2005, MTBE concentrations decreased in MW-1 and MW-3 and increased in MW-2 and MW-4. In MW-2 and MW-4, the highest concentrations of MTBE to date for those wells were detected for the November 2005 event (430 µg/l and 1300 µg/l, respectively). In MW-1 the lowest concentration of MTBE to date for that well was detected for the November 2005 event (140 µg/l). Overall, MTBE concentrations continue to fluctuate in all four wells.

Reportedly, the regional down-gradient direction is to the southwest toward the Laguna de Santa Rosa. However, heavy extraction from municipal groundwater wells within the City of Rohnert Park has perturbed the local flow direction. To date, the groundwater flow direction has been westerly (November 2004, May, August and November 2005), and southeast (February 2005).

Recommendations

EC&A recommends continued quarterly groundwater monitoring in order to evaluate groundwater quality and flow direction in the vicinity of the UST field and fuel dispensers during changes in seasonal water-table levels. During each sampling event, water levels should be measured in all wells and groundwater samples should be collected from each well and analyzed by Analytical Methods SW8015Cm/8021B for TPHg and BTEX, and by Analytical Method SW8260B for MTBE, other gasoline oxygenates and lead scavengers EDB and 1,2-DCA. As previously recommended, analysis for TPHd will not be done because it has not been detected in any of the wells for four consecutive sampling events.

Schedule

The next groundwater monitoring event is scheduled for February 2006.

Limitations

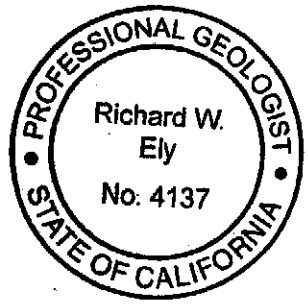
The conclusions presented in this report are professional opinions based on the information presented herein, which includes data generated by others. Whereas EC&A does not guarantee the accuracy of data supplied by third parties, we reserve the right to use this data in formulating our professional opinions. This report is intended only for the indicated purpose and project site. Conclusions and recommendations presented herein apply to site conditions existing at the time of our study. Changes in the conditions of the site property can occur with time because of natural processes or the works of man on the site or adjacent properties. In addition, changes in applicable standards can also occur as the result of legislation or from the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control.

Thank you for allowing EC&A to provide environmental services for you. Please call John Calomiris, project manager, if you have any questions.

Sincerely,

Etta Jon VandenBosch
Environmental Scientist

Richard Ely, PG #4137
Senior Geologist



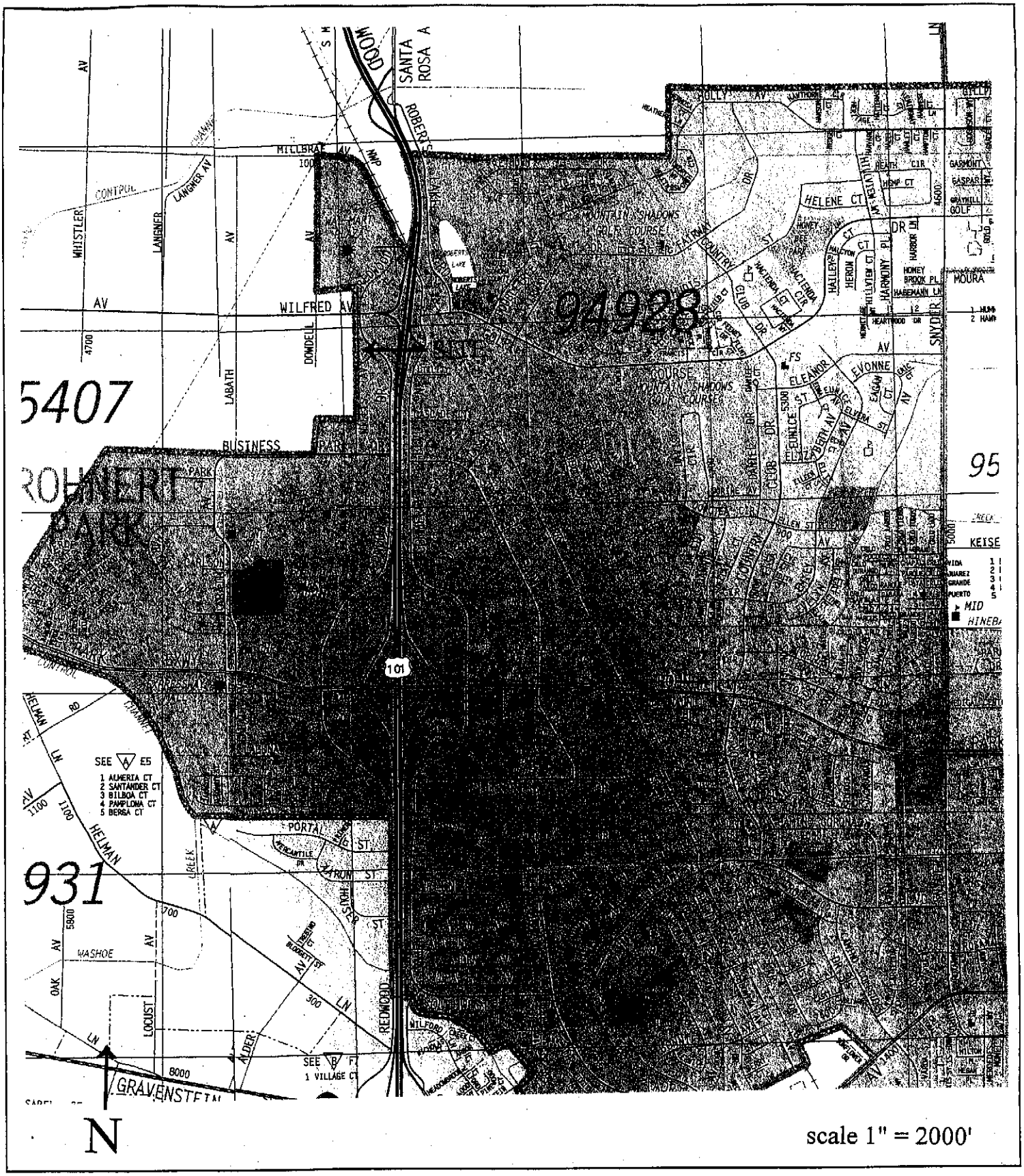
Attachments: Figure 1 - Site Location Map
Figure 2 - Groundwater Elevation Map, 04 November 2005
Figure 3 - MTBE in Groundwater Isoconcentration Map, 04 November 2005

Table 1 - Groundwater Elevation Data
Table 2 - Monitoring Well Groundwater Sample Analytical Results

Appendix A - Groundwater Field Logs
Appendix B - Analytical Laboratory Report

cc: Cliff Ives, County of Sonoma Department of Health Services
Thomas and Helen Roberts
Mostafa K. Behzadpour
Susan Keeger, Artesia Mortgage Capital Coporation

0461\QMR Nov05



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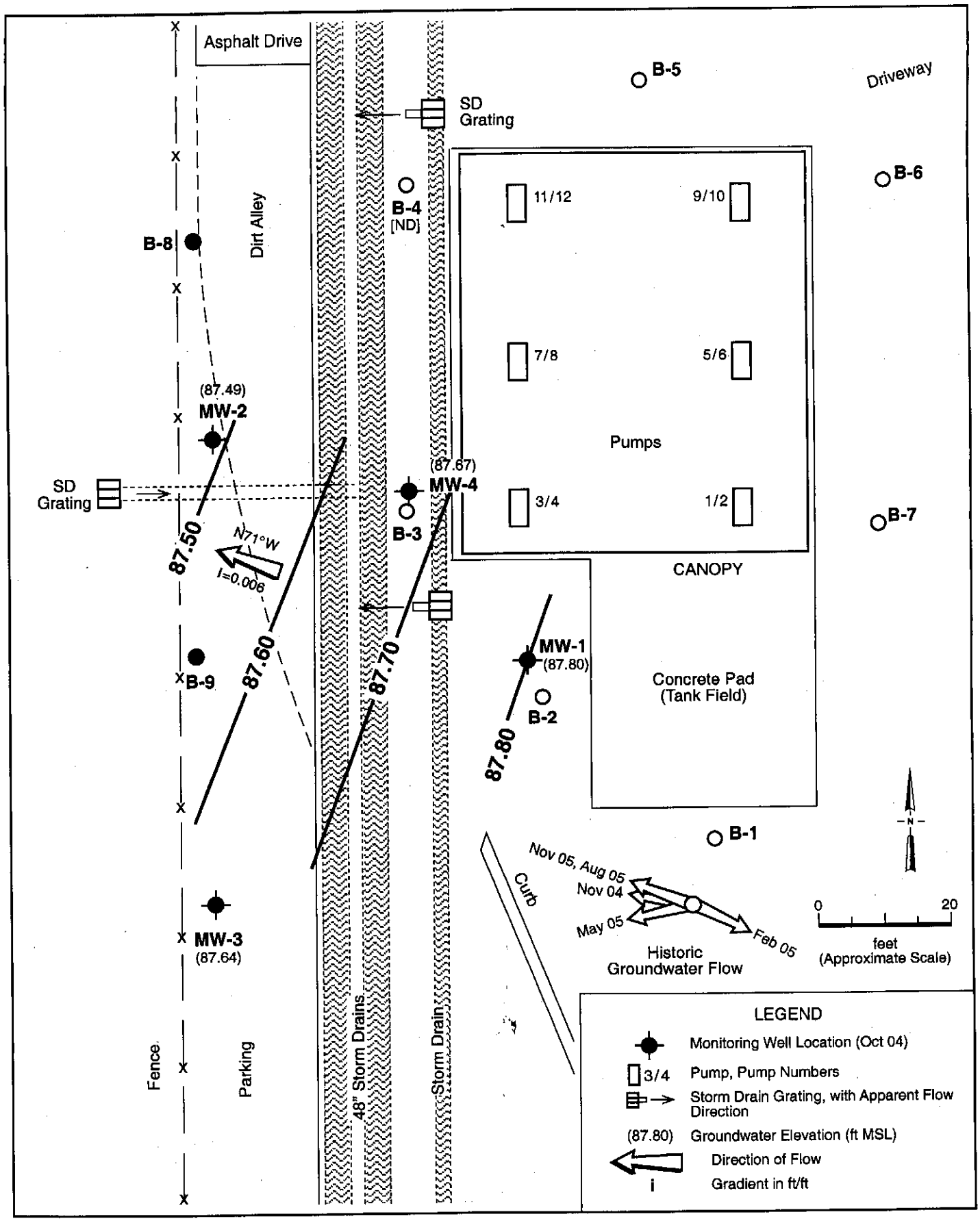
Site Location Map
5085 Redwood Drive
Rohnert Park, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
0461,001.03		November 2003	



(TRACE #385/RG/12Jan06)

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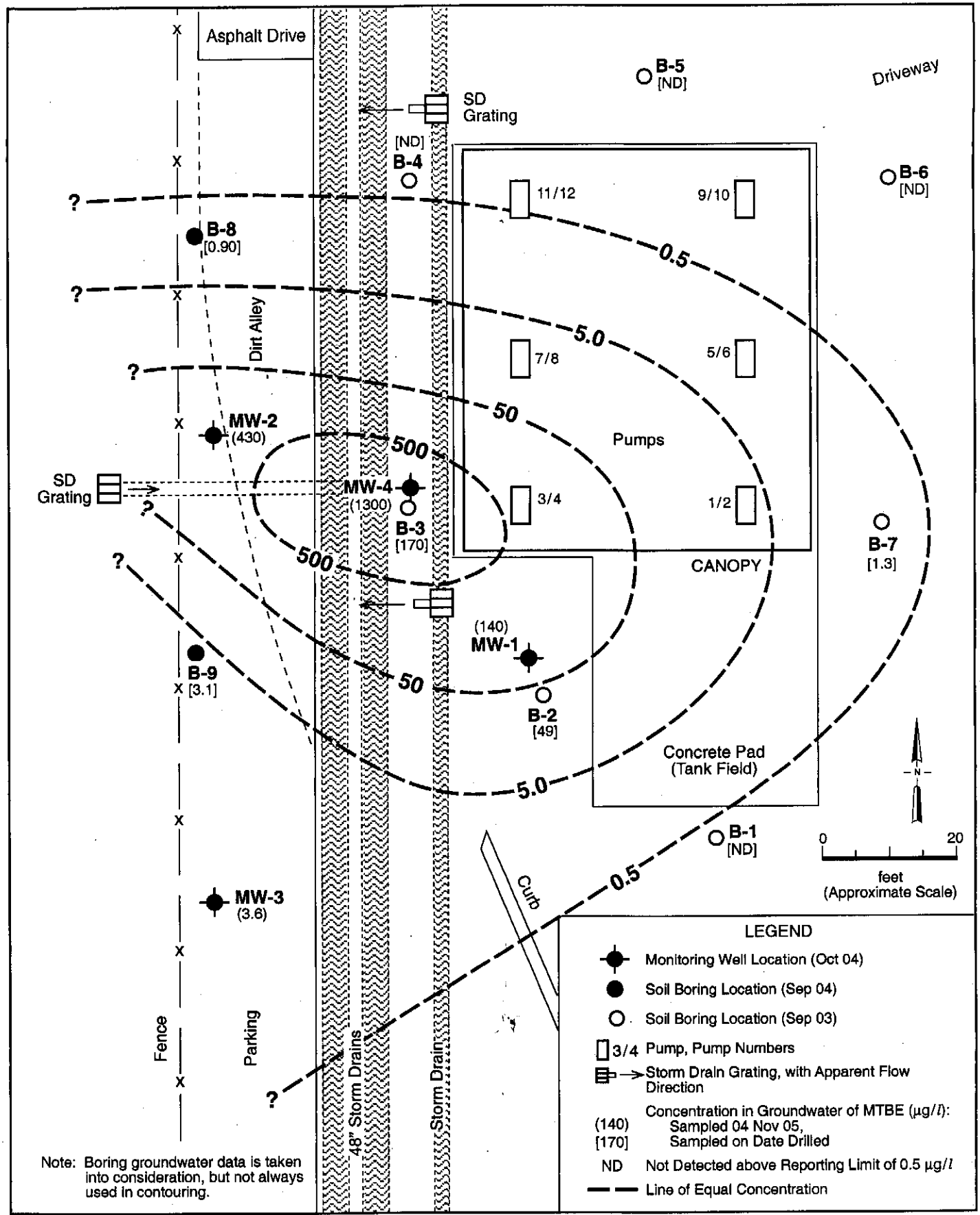
GROUNDWATER ELEVATION MAP, 04 November 2005

Tesoro Gas Station
5085 Redwood Drive
Rohnert Park, California

FIGURE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0461, 001.03	EC&A, E.J. VandenBosch	July 2003	October 2005	1 of 1



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MTBE IN GROUNDWATER ISOCONCENTRATION CONTOUR MAP, 04 November 2005

Tesoro Gas Station
5085 Redwood Drive
Rohnert Park, California

FIGURE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED	SHEET NO.
0461, 001.03	EC&A, E.J. VandenBosch	July 2003	January 2006	1 of 1

(TRACE #385/RG/12Jan06)

Table 1. Groundwater Elevation Data
5085 Redwood Drive, Rohnert Park, California

Well ID	Date	TOC Elevation feet	DTW feet	Groundwater Elevation feet
MW-1	11/09/04	93.11	5.88	87.23
MW-2		93.03	6.07	86.96
MW-3		93.23	6.22	87.01
MW-4		93.12	6.02	87.10
Gradient: N79°W, 0.005 ft/ft				
MW-1	02/16/05	93.11	4.30	88.81
MW-2		93.03	4.00	89.03
MW-3		93.23	4.32	88.91
MW-4		93.12	4.20	88.92
Gradient: S64°E, 0.004 ft/ft				
MW-1	05/03/05	93.11	4.69	88.42
MW-2		93.03	4.67	88.36
MW-3		93.23	4.88	88.35
MW-4		93.12	4.70	88.42
Gradient: S75°W, 0.016 ft/ft				
MW-1	08/17/05	93.11	6.28	86.83
MW-2		93.03	6.48	86.55
MW-3		93.23	6.54	86.69
MW-4		93.12	6.39	86.73
Gradient: N71°W, 0.005 ft/ft				
MW-1	**11/04/05**	**93.11**	**5.31**	**87.80**
MW-2		**93.03**	**5.54**	**87.49**
MW-3		**93.23**	**5.59**	**87.64**
MW-4		**93.12**	**5.45**	**87.67**
Gradient: N71°W, 0.006 ft/ft				

TOC: Top of casing elevation measured relative to mean sea level (msl)
DTW: Depth to water from TOC

Table 2. Monitoring Well Groundwater Sample Analytical Results
5085 Redwood Drive, Rohnert Park, California

Well ID	Sample Date	DTW feet	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TBA µg/l	Other Oxygenates and Lead Scavengers µg/l
MW-1	11/09/04	5.88	ND<50 [i]	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1100	ND<500	ND<50 to <50,000
	02/16/05	4.30	64 [a]	ND<50	2.1	9.0	1.3	7.6	1200	ND<250	ND<25 to <25,000
	05/03/05	4.69	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1100	ND<500	ND<50 to <50,000
	08/17/05	6.28	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	780	ND<500	ND<50 to <50,000
	11/04/05	**5.31**	**ND<50**	**NA**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**140**	**ND<25**	**ND<2.5 to <2500**
MW-2	11/09/04	6.07	ND<50 [i]	ND<50 [i]	ND<0.5	ND<0.5	ND<0.5	ND<0.5	370	ND<50	ND<5.0 to <5000
	02/16/05	4.00	400 [a]	ND<50	19	82	10	66	230	64	ND<5.0 to <5000
	05/03/05	4.67	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	69	ND<10	ND<1.0 to <1000
	08/17/05	6.48	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	390	ND<500	ND<50 to <50,000
	11/04/05	**5.54**	**ND<50**	**NA**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**430**	**ND<50**	**ND<5.0 to <5000**
MW-3	11/09/04	6.22	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.1	ND<5.0	ND<0.5 to <500
	02/16/05	4.32	ND<50	ND<50	1.5	6.6	0.77	4.8	1.2	ND<5.0	ND<0.5 to <500
	05/03/05	4.88	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	ND<0.5 to <500
	08/17/05	6.54	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.4	ND<5.0	ND<0.5 to <500
	11/04/05	**5.59**	**ND<50**	**NA**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**3.6**	**ND<5.0**	**ND<0.5 to <500**
MW-4	11/09/04	6.02	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	760	ND<250	ND<25 to <25,000
	02/16/05	4.20	ND<50	ND<50	ND<0.5	2.0	ND<0.5	1.4	1200	530	ND<25 to <25,000
	05/03/05	4.70	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	700	ND<170	ND<17 to <17,000

Table 2. **Monitoring Well Groundwater Sample Analytical Results**
5085 Redwood Drive, Rohnert Park, California

Well ID	Sample Date	DTW feet	TPHg µg/l	TPHd µg/l	Benzene µg/l	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	MTBE µg/l	TBA µg/l	Other Oxygenates and Lead Scavengers µg/l
MW-4 cont.	08/17/05	6.39	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	890	ND<120	ND<12 to <12,000
	11/04/05	**5.45**	**ND<50**	**NA**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**ND<0.5**	**1300**	**ND<250**	**ND<25 to <25,000**

TPHg: Total petroleum hydrocarbons as gasoline
TPHd: Total petroleum hydrocarbons as diesel
MTBE: Methyl tert-butyl ether; analyzed by Analytical Method SW8260B
TBA: T-butyl alcohol
µg/l: Micrograms per liter
ND: Not detected above the respective reporting limit
DTW: Depth to groundwater below top of well casing
a: Unmodified or weekly modified gasoline is significant
i: Liquid sample that contains greater than ~1 vol. % sediment

Appendix A

Groundwater Field Logs

DAILY FIELD RECORD

Page 1 of 1

Project and Task Number: 0461	Date: 11/4/05
Project Name: TOSCO R P	Field Activity: GROUNDWATER MONITOR
Location: 5085 REDWOOD DR	Weather:
Time of OVM Calibration:	

PERSONNEL

Name	Company	Time In	Time Out
CORK HOTE	ECTA		

DRUM ID	DESCRIPTION OF CONTENTS AND QUANTITY	LOCATION

TIME	
	Load ORDER 3, 2, 1, 4
	Depart
	open all wells Setup Decon
	Take DTW's MW-15.31 MW-35.59
	MW-25.54 MW-45.45
	Calc Log's
	Begin Purging
	Take Post Purge DTW's
10:30	Begin sampling
	Close And Lock all wells
	Clean up site
	Depart

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FIELD LOG

☒ GROUNDWATER	☐ SURFACE WATER	☐ DOMESTIC WATER	☐ IRRIGATION WATER	☐ WELL DEVELOPMENT

Project No: 0461	Field point name: MW-1
Global ID: T0609794489	Well depth from TOC: 20
Project location: 5085 Redwood OR	Well diameter: ☒ 2" ☐ 4 " ☐ 6" ☐ Other:
Date: 11/4/05	Product level from TOC: ND
Time:	Water level from TOC: 5.31
Recorded by: Carl H	Screened interval: 5-20
Purge time (duration):	Well elevation (TOC):

WEATHER

Wind: 0 - MPH	Precip. in last 5 days: yes

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

☒ 2" well = 0.17 gal/ft 14.69	☐ 6" well = 1.47 gal/ft	Gallons in 1 well volume: 2.50	
☐ 4" well = 0.66 gal/ft	☐ " well = gal/ft	Total gallons removed: 7.5	Well volumes removed: 3.

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC uS (x1000)	Temp °F	Case Volumes/ Gallons	ORP	Appearance
	7.85	1000	69.5	1 / 2.5	121	Low Turb no odor no sheen
	7.81	1053	71.5	2 / 5.0	122	
	7.78	993.9	71.4	3 / 7.5	120	
				/		

Notes:

Water level after purging below TOC:	80% of original water level below TOC: yes
Water level before sampling below TOC: 5.39	
Appearance of sample:	Time: 10:50

☐ Bailer:	Type:	GPM:	☒ Pump: ESP	Type: Submersible	GPM: (1) 2
☐ Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	☒ TPHg	☐ TPHd	☐ TPH	☒ BTEX	☒ 7 oxygenates	☒ Lead scavengers	☐ VOCs	☐ Nitrates
EPA Method:								

Other:

LABORATORY: ☒ McCampbell Analytical ☐ Other:

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FIELD LOG

☒ GROUNDWATER	☐ SURFACE WATER	☐ DOMESTIC WATER	☐ IRRIGATION WATER	☐ WELL DEVELOPMENT

Project No: 0461	Field point name: MW-2
Global ID: T0609794489	Well depth from TOC: 20
Project location: 5085 Redwood OR	Well diameter: ☒ 2" ☐ 4 " ☐ 6" ☐ Other:
Date: 11/4/05	Product level from TOC: ND
Time:	Water level from TOC: 5.54
Recorded by: Carl H	Screened interval: 5-20
Purge time (duration):	Well elevation (TOC):

WEATHER

Wind: 0 - mph	Precip. in last 5 days: yes

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

☒ 2" well = 0.17 gal/ft 14.46	☐ 6" well = 1.47 gal/ft	Gallons in 1 well volume: 2.46	
☐ 4" well = 0.66 gal/ft	☐ " well = gal/ft	Total gallons removed: 7.5	Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC uS (x1000)	Temp °F	Case Volumes/ Gallons	Orp	Appearance
	7.62	1925	62.9	1 / 2.5	145	Low Turb no odor no Sheen
	7.56	1914	63.1	2 / 5.0	148	
	7.53	1911	63.1	3 / 7.5	145	
				/		

Notes:

Water level after purging below TOC:	80% of original water level below TOC: yes
Water level before sampling below TOC: 5.61	
Appearance of sample:	Time: 10:40

☐ Bailer:	Type:	GPM:	☒ Pump: ES40	Type: Submersible	GPM: (1) 2
☐ Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	☒ TPHg	☐ TPHd	☐ TPH	☒ BTEX	☒ 7 oxygenates	☒ Lead scavengers	☐ VOCs	☐ Nitrates
EPA Method:								

Other:

LABORATORY: ☒ McCampbell Analytical ☐ Other:

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FIELD LOG

☒ GROUNDWATER	☐ SURFACE WATER	☐ DOMESTIC WATER	☐ IRRIGATION WATER	☐ WELL DEVELOPMENT

Project No: 0461	Field point name: MW-3
Global ID: T0609794489	Well depth from TOC: 20
Project location: 5085 Redwood OR	Well diameter: ☒ 2" ☐ 4 " ☐ 6" ☐ Other:
Date: 11/4/05	Product level from TOC: ND
Time:	Water level from TOC: 5.59
Recorded by: Carl H	Screened interval: 5-20
Purge time (duration):	Well elevation (TOC):

WEATHER

Wind: 0 - MPH	Precip. in last 5 days: yes

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

☒ 2" well = 0.17 gal/ft 14.41	☐ 6" well = 1.47 gal/ft	Gallons in 1 well volume: 2.45	
☐ 4" well = 0.66 gal/ft	☐ " well = gal/ft	Total gallons removed: 7.5	Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC (x1000) uS	Temp °F	Case Volumes/ Gallons	Grp	Appearance
	7.61	2023	62.4	1 / 2.5	197	Low Turb No odor no sheen
	7.55	2027	62.9	2 / 5.0	182	
	7.51	2048	62.9	3 / 7.5	176	
				/		

Notes:

Water level after purging below TOC:	80% of original water level below TOC: yes
Water level before sampling below TOC: 5.65	
Appearance of sample:	Time: 10:30

☐ Bailer:	Type:	GPM:	☒ Pump: ES 40	Type: Submersible	GPM: (1) 2
☐ Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	☒ TPHg	☐ TPHd	☐ TPH	☒ BTEX	☒ 7 oxygenates	☒ Lead scavengers	☐ VOCs	☐ Nitrates
EPA Method:								

her:

RATORY: ☒ McCampbell Analytical ☐ Other:

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FIELD LOG

☒ GROUNDWATER	☐ SURFACE WATER	☐ DOMESTIC WATER	☐ IRRIGATION WATER	☐ WELL DEVELOPMENT

Project No: 0461	Field point name: MW-4
Global ID: T0609728468	Well depth from TOC: 20
Project location: 5085 Redwood DR	Well diameter: ☒ 2" ☐ 4 " ☐ 6" ☐ Other:
Date: 11/4/05	Product level from TOC: ND
Time:	Water level from TOC: 5.45
Recorded by: Carl H	Screened interval: 5-20
Purge time (duration):	Well elevation (TOC):

WEATHER

Wind: 0 - mph	Precip. in last 5 days: yes

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING

☒ 2" well = 0.17 gal/ft 14.55	☐ 6" well = 1.47 gal/ft	Gallons in 1 well volume: 2.47	
☐ 4" well = 0.66 gal/ft	☐ " well = gal/ft	Total gallons removed: 7.5	Well volumes removed: 3

CALIBRATION

Parameter	Time	Calibration	Before Sampling	Time	After Sampling
EC:					

FIELD MEASUREMENTS

Time	pH	EC µS (x1000)	Temp °F	Case Volumes/ Gallons	Orp	Appearance
	7.71	1154	65.3	1 / 2.5	121	mid Turb no Odor no Sheen
	7.67	1164	65.4	2 / 5.0	122	
	7.62	1184	65.4	3 / 7.5	120	
				/		

Notes:

Water level after purging below TOC:	80% of original water level below TOC: yes
Water level before sampling below TOC: 5.53	
Appearance of sample:	Time: 11:00

☐ Bailer:	Type:	GPM:	☒ Pump: ESP	Type: Submersible	GPM: 1 2
☐ Dedicated:	Type:	GPM:	Decontamination method: Liquinox wash, double rinse		

Sample analysis:	☒ TPHg	☐ TPHd	☐ TPH	☒ BTEX	☒ 7 oxygenates	☒ Lead scavengers	☐ VOCs	☐ Nitrates
EPA Method:								

Other:

LABORATORY: ☒ McCampbell Analytical ☐ Other:

Appendix B

Analytical Laboratory Report

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Edd Clark & Associates, Inc. 320 Professional Center Ste. 215 Rohnert Park, CA 94928	Client Project ID: #0461; TESORO	Date Sampled: 11/04/05
		Date Received: 11/07/05
	Client Contact: Cole Hute	Date Reported: 11/14/05
	Client P.O.:	Date Completed: 11/14/05

WorkOrder: 0511139

November 14, 2005

Dear Cole:

Enclosed are:

1). the results of 4 analyzed samples from your **#0461; TESORO project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Edd Clark & Associates, Inc.	Client Project ID: #0461; TESORO	Date Sampled: 11/04/05
320 Professional Center Ste. 215		Date Received: 11/07/05
Rohnert Park, CA 94928	Client Contact: Cole Hute	Date Extracted: 11/08/05-11/09/05
	Client P.O.:	Date Analyzed: 11/08/05-11/09/05

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0511139

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND	---	ND	ND	ND	ND	1	107
002A	MW-2	W	ND	---	ND	ND	ND	ND	1	106
003A	MW-3	W	ND	---	ND	ND	ND	ND	1	99
004A	MW-4	W	ND	---	ND	ND	ND	ND	1	108

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

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Edd Clark & Associates, Inc.	Client Project ID: #0461; TESORO	Date Sampled: 11/04/05
320 Professional Center Ste. 215		Date Received: 11/07/05
Rohnert Park, CA 94928	Client Contact: Cole Hute	Date Extracted: 11/09/05-11/11/05
	Client P.O.:	Date Analyzed: 11/09/05-11/11/05

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B Analytical Method: SW8260B Work Order: 0511139

Lab ID	0511139-001B	0511139-002B	0511139-003B	0511139-004B	Reporting Limit for DF =1	
Client ID	MW-1	MW-2	MW-3	MW-4		
Matrix	W	W	W	W		
DF	5	10	1	50	S	W
Compound	**Concentration**				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<2.5	ND<5.0	ND	ND<25	NA	0.5
t-Butyl alcohol (TBA)	ND<25	ND<50	ND	ND<250	NA	5.0
1,2-Dibromoethane (EDB)	ND<2.5	ND<5.0	ND	ND<25	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<2.5	ND<5.0	ND	ND<25	NA	0.5
Diisopropyl ether (DIPE)	ND<2.5	ND<5.0	ND	ND<25	NA	0.5
Ethanol	ND<250	ND<500	ND	ND<2500	NA	50
Ethyl tert-butyl ether (ETBE)	ND<2.5	ND<5.0	ND	ND<25	NA	0.5
Methanol	ND<2500	ND<5000	ND	ND<25,000	NA	500
Methyl-t-butyl ether (MTBE)	140	430	3.6	1300	NA	0.5
Surrogate Recoveries (%)						
%SS1:	103	102	103	102		
Comments						

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water | QC Matrix: Water | WorkOrder: 0511139

EPA Method: SW8021B/8015Cm | **Extraction: SW5030B** | **BatchID: 18924** | **Spiked Sample ID: 0511133-002A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)[£]	ND	60	102	101	1.31	101	104	2.59	70 - 130	70 - 130
MTBE	ND	10	98.4	89.9	8.99	98.4	102	3.44	70 - 130	70 - 130
Benzene	ND	10	88.7	87	1.87	89.3	91.1	2.01	70 - 130	70 - 130
Toluene	ND	10	90.4	88.3	2.35	91.1	92.9	2.01	70 - 130	70 - 130
Ethylbenzene	ND	10	91.7	89.2	2.77	91.6	93	1.52	70 - 130	70 - 130
Xylenes	ND	30	94.3	90	4.70	94.3	94.7	0.353	70 - 130	70 - 130
%SS:	110	10	97	99	1.52	99	99	0	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 18924 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511139-001A	1/04/05 10:50 AM	11/08/05	11/08/05 9:17 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0511139

EPA Method: SW8021B/8015Cm **Extraction: SW5030B** **BatchID: 18929** **Spiked Sample ID: 0511145-004A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	104	99.1	4.35	106	103	3.11	70 - 130	70 - 130
MTBE	ND	10	96.4	93	3.60	94.3	96	1.81	70 - 130	70 - 130
Benzene	ND	10	91.1	86.4	5.33	86.1	86.7	0.621	70 - 130	70 - 130
Toluene	ND	10	92.4	86.7	6.32	86.5	88.7	2.45	70 - 130	70 - 130
Ethylbenzene	ND	10	92.8	88	5.29	88.8	89.3	0.510	70 - 130	70 - 130
Xylenes	ND	30	95	89.7	5.78	90	90	0	70 - 130	70 - 130
%SS:	106	10	100	98	2.43	96	99	2.52	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 18929 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511139-002A	1/04/05 10:40 AM	11/08/05	11/08/05 9:47 PM	0511139-002A	1/04/05 10:40 AM	11/09/05	11/09/05 5:21 PM
0511139-003A	1/04/05 10:30 AM	11/09/05	11/09/05 6:21 PM	0511139-004A	1/04/05 11:00 AM	11/08/05	11/08/05 10:46 PM
0511139-004A	1/04/05 11:00 AM	11/09/05	11/09/05 7:21 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water | QC Matrix: Water | WorkOrder: 0511139

EPA Method: SW8260B	Extraction: SW5030B				BatchID: 18928			Spiked Sample ID: 0511145-002B		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	113	113	0	114	116	1.98	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	91.7	91.7	0	93.2	96.9	3.96	70 - 130	70 - 130
1,2-Dibromoethane (EDB)	ND	10	111	109	1.53	111	114	3.01	70 - 130	70 - 130
1,2-Dichloroethane (1,2-DCA)	ND	10	120	120	0	118	119	0.578	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	107	107	0	108	109	1.54	70 - 130	70 - 130
Ethanol	ND	500	103	106	2.75	99.1	107	7.35	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	102	103	1.02	103	106	3.03	70 - 130	70 - 130
Methanol	ND	2500	99.2	98.7	0.459	102	99.6	2.42	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	101	100	0.909	102	104	2.61	70 - 130	70 - 130
%SS1:	103	10	99	101	1.29	99	98	1.02	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 18928 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0511139-001B	1/04/05 10:50 AM	11/10/05	11/10/05 8:23 AM	0511139-002B	1/04/05 10:40 AM	11/09/05	11/09/05 3:21 AM
0511139-003B	1/04/05 10:30 AM	11/09/05	11/09/05 4:04 AM	0511139-004B	1/04/05 11:00 AM	11/11/05	11/11/05 6:29 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

QA/QC Officer

ECAR 0511139

Chain of Custody Report

Edd Clark & Associates, Inc.
Environmental Consultants
P.O. Box 3039, Rohnert Park, CA 94927
Tel: (707) 792-9500 (800) 474-1448 Fax: (707) 792-9504

E-mail in EDF for Upload to Geotracker: Yes ☒ No ☐ Initials CA

Samplers Signature: COLE HUTT

EC&A job # 0461

Global I.D. # T0609729469

Facility Name & Location: TESORO 5085 REDWOOD DR ROHNERT PARK

Field Point Name	Date	Time	Sample ID (depth)	Sample Type	Media	# of Items	Analysis: TPHg BTEX	Analysis: 7 OXYGENATES Pb SCAVENGERS 8260	Analysis:	ICE/T GOOD CONDITION HEAD SPACE ABSENT DECHLORINATED IN LAB PRESERVATION VOAS	O&G	METALS	OTHER	APPROPRIATE CONTAINERS PRESERVED IN LAB	Remarks
MW-1	11/4/05	10:50		Discrete	W	3	X	X		✓ ✓ ✓				✓	
MW-2	↓	10:40		↓	↓	3	X	X							
MW-3		10:30				3	X	X							
MW-4		11:00				3	X	X							

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
Cole Hutt	11/04/05	1308	Ruben Salgado	Ruben	11/7		
Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0511139 **ClientID: ECAR** **EDF: YES**

Report to:
Cole Hute
Edd Clark & Associates, Inc.
320 Professional Center Ste. 215
Rohnert Park, CA 94928
TEL: (707) 792-9500
FAX: (707) 792-9504
ProjectNo: #0461; TESORO
PO:

Bill to:
Accounts Payable
Edd Clark & Associates, Inc.
320 Professional Center Ste.215
Rohnert Park, CA 94928

Requested TAT: 5 days
Date Received: 11/07/2005
Date Printed: 11/07/2005

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0511139-001	MW-1	Water	11/04/2005	☐	B	A	A									
0511139-002	MW-2	Water	11/04/2005	☐	B	A										
0511139-003	MW-3	Water	11/04/2005	☐	B	A										
0511139-004	MW-4	Water	11/04/2005	☐	B	A										

Test Legend:

1	9-OXYS_W	2	G-MBTEX_W	3	PREDF REPORT	4		5	
6		7		8		9		10	
11		12							

Prepared by: Rosa Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.